Intro

This guide has been created to help future Delta V Innovation database teams understand the setup of the existing database and how to use the tools necessary to make changes to the database. The database is stored on AWS; however much of the work we did this semester was through Heidi SQL. It is a tool that allows for data to be easily inserted if the data is in csv or dbf format and allows for querying of the database to check the contents. Information for how to use AWS and Heidi SQL is in detail below. Additional information can be found on either of the websites for this year's team and last year's team.

2019 Fall Semester Team
https://jacobhuff.github.io/team4/

2018 Spring Semester Team
https://cs499s18p10.github.io/cs499s18p10/

2018 Fall Semester Team
https://acri232.github.io/CS499Team5/

AWS Login and Info

AWS is stands for Amazon Web Services and is where the Delta V database is stored. Using AWS is pretty straight forward; however login information must be known in order to access the database instance.

Login Procedure

1. Google aws or simply go to this site: https://aws.amazon.com/
2. Click on sign in in order to navigate to the sign in page
3. Use the following email and password to login
   Username:
   deltaVinnovationsinc@gmail.com
   Password:
   CS499UK!
4. Under "Database" select "RDS"
5. The page that you will be navigated to will look like this. Click here
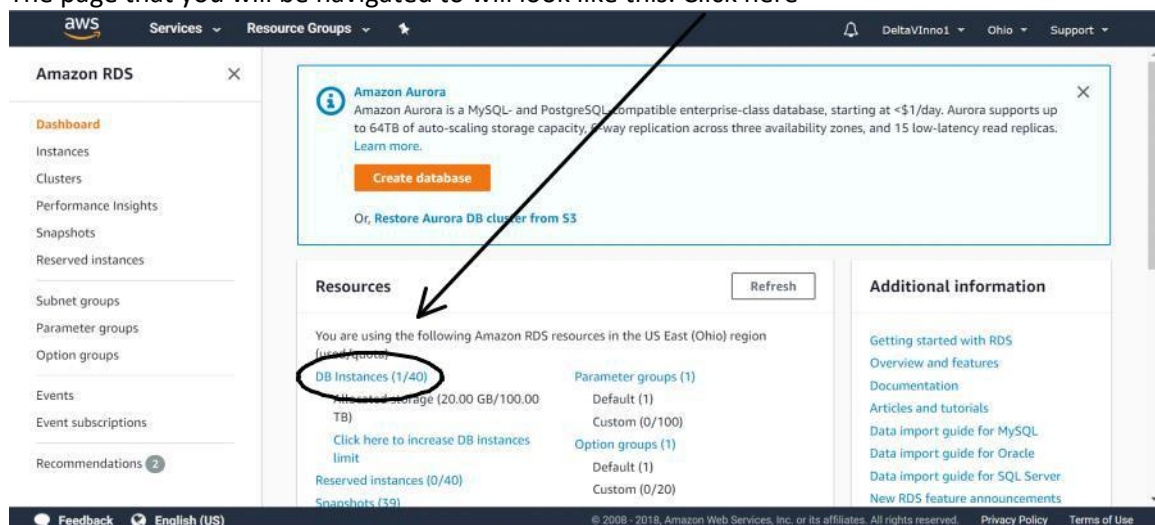
6. There will always only be one instance. At this point the screen you should be looking at will be
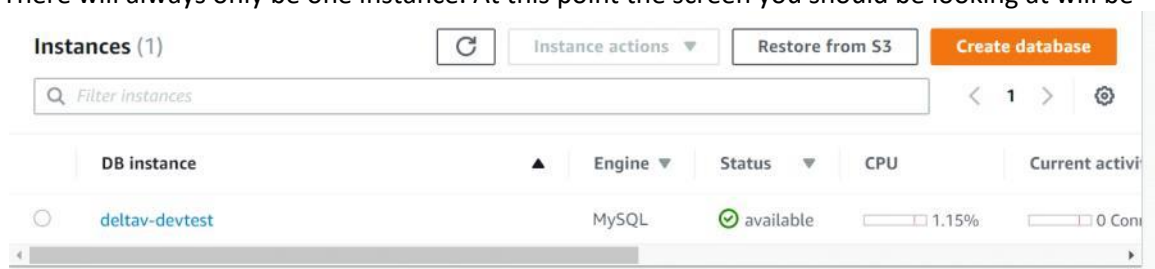
7. Next click on the DB instance "deltav-devtest" to see more information about it
8. All the statistics and AWS information needed can then be found.

AWS Notes

The information needed to login into Heidi SQL is found within the instance of the database on AWS under "Connect". A screenshot is provided below of the current connection information

Connect

Endpoint	Port	Publicly accessible
deltav-devtest.ci5dqgpsfw9c.us-east-2.rds.amazonaws.com	3306	Yes

Security group rules (3)

** It is very important to NOT create another instance of the database. This will cost money to the customer and therefore speak with Mike first if you think it's necessary to create another one. The data manipulation of the database will not be done using AWS, but instead using another tool such as Heidi SQL or mySQL workbench.

Heidi SQL Login and Info

Heidi SQL is a tool used for database manipulation and is the main tool we used throughout the semester when inserting data.

Downloading Heidi SQL
1. A quick google of Heidi SQL should bring you to their website: https://www.heidisql.com/
2. Navigate to the downloads tab
3. Use the installer to install Heidi SQL on to your machine

Login Procedure
1. Run Heidi SQL
2. A login page like the one below will be opened
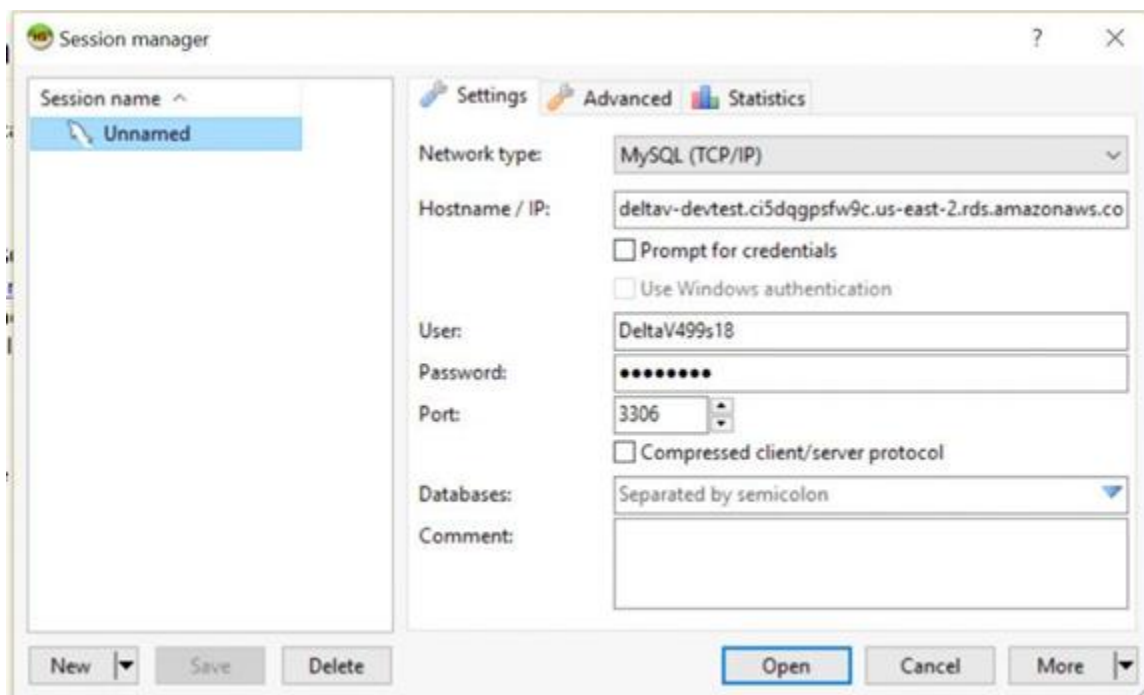
3. The hostname and port information is found under "Connect" in the AWS database instance
4. The Username and Password are:
   Username:
   DeltaV499s18
   Password:
   CS499UK!
5. Hit "Open"

Data Insertion
1. In order to insert data first navigate to the table you want to insert into
2. Find "Tools" in the top navigation bar and select "Import CSV File..."
3. A popup like below will open
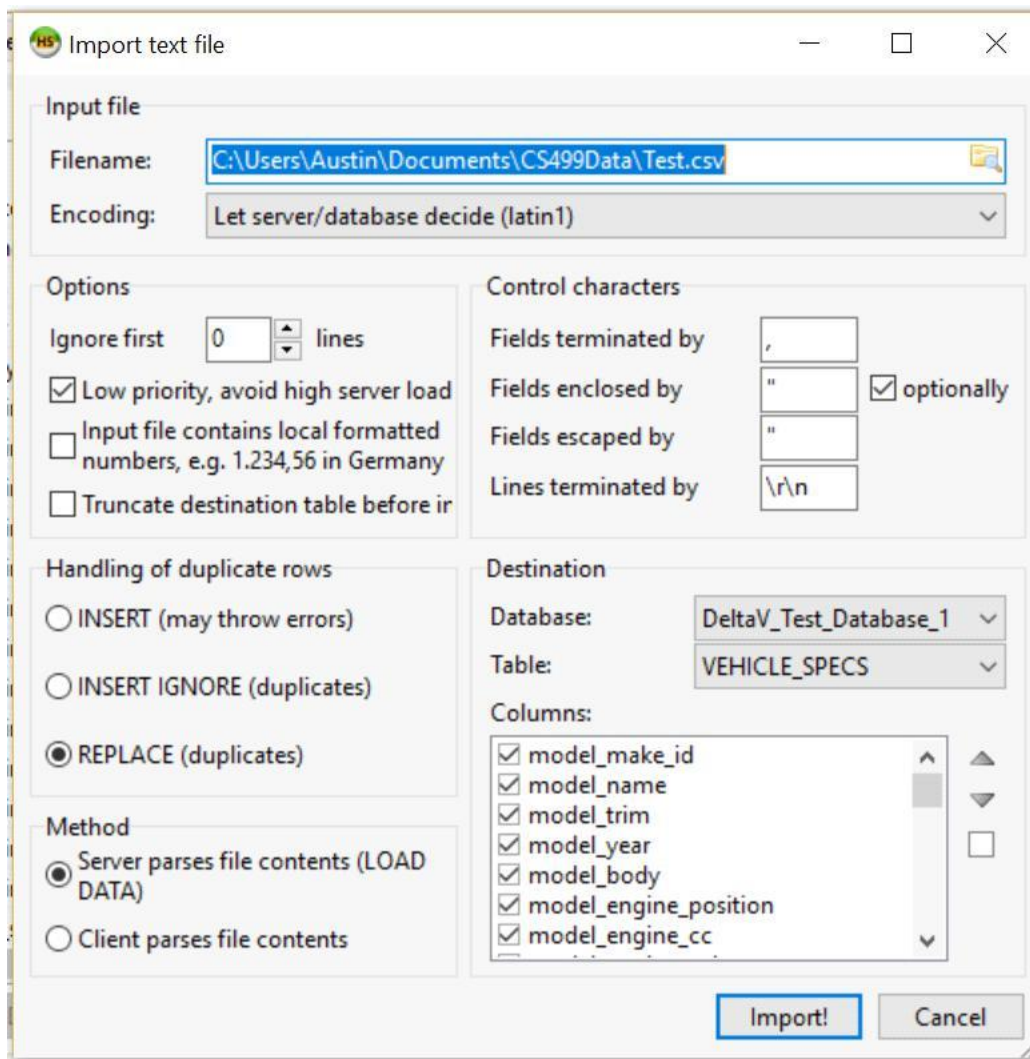
4. Enter in the filename
5. The fields should be terminated by commas since it is CSV
6. If there are blank lines in your file utilize the ignore first lines feature
7. In our experience it is easiest to insert data when all the columns are present in the CSV file
   So, if your files are missing columns that are in a table, you can simply go into the csv file and add those columns, which makes the process easier
8. Hit "Import!"

Heidi SQL Usage

If confused about how to use Heidi SQL to view the data in the database, refer to the next page.

Database Setup

The database is built up for the most part with almost all the current vehicle specs now being stored in VEHICLE_SPECS_merge. Note that Vehicle Specs and Vehicle Specs Additional are kept as backups. It is recommended that before doing any updates to back up the database to a csv file or make a copy of the table and work off that. The best way to view the database tables and data inside of them is using Heidi SQL.

All of the tables will be shown on the left side of the main page.

Table	Size
DeltaV_Test_Database_1	54.2 MiB
ACCELERATING_DEACCELERATING_...	16.0 KiB
BRAKING_EFFICIENCY	16.0 KiB
CASES	32.0 KiB
Distinct_Clean_additional	2.5 MiB
Employees	32.0 KiB
ENVIRONMENT	16.0 KiB
Login	16.0 KiB
LOW_SPEED_COEFFICIENT_OF_RESTI...	16.0 KiB
Merged1234	144.0 KiB
NON_STANDARD_COEFFICENT_OF_...	16.0 KiB
OCCUPANT_INFO	16.0 KiB
PEDESTRIAN_SPEEDS	16.0 KiB
REFERENCE	16.0 KiB
ROLLING_COEFFICIENT_OF_FRICTION	16.0 KiB
STANDARD_COEFFICIENT_OF_FRICT...	16.0 KiB
STIFFNESS_COEFFICIENT	16.0 KiB
TEST	16.0 KiB
USERS	32.0 KiB
USER_WORKGROUP	16.0 KiB
VEHICLE	16.0 KiB
VEHICLE_distinct_additional	3.5 MiB
VEHICLE_SPECS	12.5 MiB
VEHICLE_SPECS_ADDITIONAL	4.5 MiB
VEHICLE_SPECS_ADDITIONAL_Test_...	2.5 MiB
VEHICLE_SPECS_copy	12.5 MiB
VEHICLE_SPECS_merge	15.5 MiB
VEHICLE_STIFFNESS	16.0 KiB
WALKING_VELOCITY	16.0 KiB
WORKGROUPS	16.0 KiB

Once a table is clicked on then information about that table can be found. Navigate to the "Table: table name" to see the attributes and variable types.

Host: deltav-devtest.ci5d...	Database: DeltaV_Test_Databas...	Table: VEHICLE_SPECS_merge	Data

| Basic | Options | Indexes | Foreign keys | Partitions | CREATE code | ALTER code |

Name: VEHICLE_SPECS_merge

Comment:

Columns: Add Remove Up Down

#	Name	Datatype	Length/Set	Unsigned	Allow N...
1	model_make_id	VARCHAR	45		✔
2	model_name	VARCHAR	45		✔
3	model_trim	VARCHAR	60		✔
4	model_year	VARCHAR	45		✔
5	model_body	VARCHAR	45		✔
6	model_engine_position	VARCHAR	45		✔
7	model_engine_cc	VARCHAR	45		✔
8	model_engine_cyl	VARCHAR	45		✔
9	model_engine_type	VARCHAR	45		✔
...	model_engine_valves_per_cyl	VARCHAR	45		✔
...	model_engine_power_ps	VARCHAR	45		✔
...	model_engine_power_rpm	VARCHAR	45		✔
...	model_engine_torque_nm	VARCHAR	45		✔
...	model_engine_torque_rpm	VARCHAR	45		✔
...	model_engine_bore_mm	VARCHAR	45		✔
...	model_engine_stroke_mm	VARCHAR	45		✔

To see what data is actually contained in the table go to the "Data" tab.

DeltaV_Test_Database_1.VEHICLE_SPECS_merge: 77,079 rows total (approximately), limited to 1,000

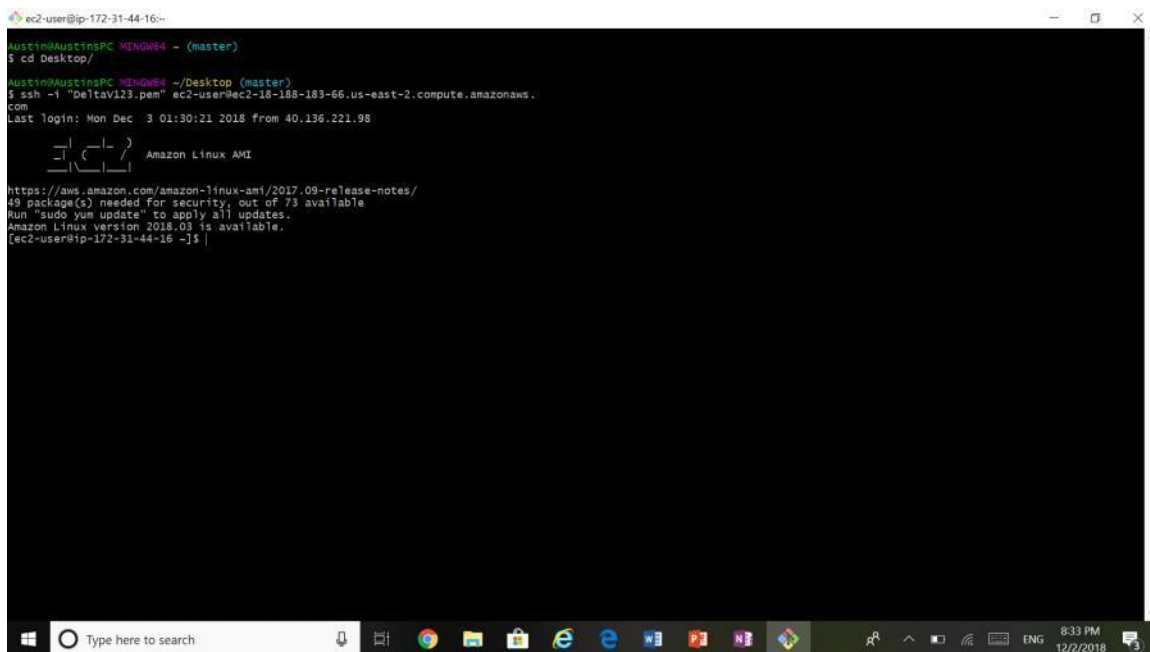| model_make_id	model_name	model_trim	model_year
DODGE	RAM 1500	WAGON SHORT WB	1998
MERCEDES-BENZ	SPRINTER 2500	CARGO VAN 170-IN WB EXTRALONG H	2014
MERCEDES-BENZ	SPRINTER 2500	CARGO VAN 170-IN WB EXTRALONG S	2014
MERCEDES-BENZ	SPRINTER	2500 CARGO VAN 4X4 170-IN WB EXTRALO	2014
MERCEDES-BENZ	SPRINTER 3500	CARGO VAN 170-IN WB EXTRALONG H	2014
MERCEDES-BENZ	SPRINTER 3500	CARGO VAN 170-IN WB EXTRALONG S	2014
MERCEDES-BENZ	SPRINTER	3500 CARGO VAN 4X4 170-IN WB EXTRALO	2014
DODGE	Sprinter	2500 EXT Van	2009
DODGE	SPRINTER 2500	CARGO VAN 170-IN WB EXTENDED HI	2008
DODGE	SPRINTER 3500	CARGO VAN 170-IN WB EXTE 2500 EXT Van	2008
MERCEDES-BENZ	SPRINTER 2500	CARGO VAN 170-IN WB EXTRALONG H	2008
MERCEDES-BENZ	SPRINTER 2500	CARGO VAN 170-IN WB EXTRALONG S	2008
MERCEDES-BENZ	SPRINTER 3500	CARGO VAN 170-IN WB EXTRALONG H	2008
MERCEDES-BENZ	SPRINTER 3500	CARGO VAN 170-IN WB EXTRALONG S	2008
MERCEDES-BENZ	SPRINTER 2500	CARGO VAN 170-IN WB HIGH ROOF	2014
MERCEDES-BENZ	SPRINTER 2500	CARGO VAN 170-IN WB SUPER HIGH	2014
MERCEDES-BENZ	SPRINTER 2500	PASSENGER VAN 170-IN WB HIGH RO	2014
MERCEDES-BENZ	SPRINTER	2500 PASSENGER VAN 4X4 170-IN WB HIG	2014
MERCEDES-BENZ	SPRINTER 3500	CARGO VAN 170-IN WB HIGH ROOF	2014
MERCEDES-BENZ	SPRINTER 3500	CARGO VAN 170-IN WB SUPER HIGH	2014
DODGE	Sprinter	3500 Van 170-in. WB	2009
DODGE	SPRINTER 2500	CARGO VAN 170-IN WB HIGH ROOF	2008
DODGE	SPRINTER 2500	PASSENGER VAN 170-IN WB HIGH RO	2008
DODGE	SPRINTER 3500	CARGO VAN 170-IN WB HIGH ROOF	2008
MERCEDES-BENZ	SPRINTER 2500	CARGO VAN 170-IN WB HIGH ROOF	2008
MERCEDES-BENZ	SPRINTER 2500	CARGO VAN 170-IN WB SUPER HIGH	2008
MERCEDES-BENZ	SPRINTER 2500	PASSENGER VAN 170-IN WB HIGH RO	2008
MERCEDES-BENZ	SPRINTER 3500	CARGO VAN 170-IN WB HIGH ROOF	2008
MERCEDES-BENZ	SPRINTER 3500	CARGO VAN 170-IN WB SUPER HIGH	2008
MERCEDES-BENZ	Sprinter	2500 170 Cargo	2011

Here is a Legend from the Canadian Vehicle Specs website, which is where the files that were used to import car specs into Vehicle Additional table. More Info on imported data from the Canadian Vehicle Specifications can be found at http://www.carsp.ca/research/resources/safety-sources/canadian-vehicle-specifications/

A	Longitudinal distance between the center of the front bumper and the center of the base of the windshield
B	Passenger Car 　Longitudinal distance between the center of the rear bumper 　and the center of the base of the backlight Station Wagon and Vans 　Longitudinal distance between the backlight top moulding 　and the front door latch pillar Pick-ups 　Longitudinal distance between the rearmost projection 　and the front door latch pillar
C	The maximum vertical height of the side glass
D	Vertical distance between the base of the side glass and the lower edge of the rocker panel
E	Distance between side rails or maximum width of top
F	Front overhang
G	Rear overhang
OL	Overall length
OW	Overall width
OH	Overall height
WB	Wheelbase
TWF	Front track width
TWR	Rear track width
CW	Curb weight
WD	Weight distribution (Front/Rear)

AWS PHP File Access

The PHP files with the SQL queries between the app and database are stored on an AWS server instance. To access the files, one must SSH into the instance. This can only be done by providing the .pem file which is found on the project github. The process for accessing the PHP file is detailed below.

1. Copy and paste the .pem file to a text editor (notpad or notepad++) and save with the name DeltaV123.pem. This can be saved as a .txt file locally.
2. Download the latest version of git bash some other software that will be able to ssh into an instance.
3. Type in the following command:
   a. ssh -i "DeltaV123.pem" ec2-user@ec2-18-188-183-66.us-east-2.compute.amazonaws.com
   b. NOTE: "DeltaV123.pem" should include the path to the .pem file.
4. Once logged onto the server, you should see a screen similar to the one below.
5. You can also use the directions given in the server setup instructions folder, which uses putty to login to the server

5. Enter the command 'cd /var/www/html'
6. From here you can view and alter php file
7. If you wish to save any changes made you must use sudo when going to edit, ie. Sudo vim car.php